

In re Patent Application of
DIPIAZZA
Serial No. 10/849,579
Filed: MAY 20, 2004

In the Claims:

This listing of claims replaces all prior versions and listings of claims in the application.

1. (Currently amended) A communication system, comprising:

a first communication module adapted to:

receive a first type of communication signal, convert the first type of communication signal to a second type of communication signal and transmit the second type of communication signal to a second communication module;

the second communication module disposed on a building and adapted to receive the second type of communication signal from the first communication module, and transmit the second type of communication signal inside the building to a third communication module at a power level based on a signal-to-interference level;

the third communication module located inside the building and adapted to receive the second type of communication signal, convert the second type of communication signal into the first type of communication signal, and transmit the first type of communication signal ~~and further wherein,~~

the third communication module is also configured to receive the first type of communication signal, convert the first type of

communication signal into the second type of communication signal and transmit the second type of communication signal to the second communication module;

the second communication module is configured to receive the second type of communication signal from the third communication module and transmit the second type of communication signal to the first communication module; and

the first communication module is configured to receive the second type of communication signal, convert the second type of communication signal to the first type of communication signal and transmit the first type of communication signal.

2. (Canceled).

3. (Currently amended) The system of claim 1, wherein: the third communication module comprises communication processing circuitry that is configured to validate the second type of communication signal; and the third communication module only transmits the first type of communication signal if the second type of communication signal is validated by the communication processing circuitry.

4. (Currently amended) The system of claim 1, wherein the first type of communication signal is ~~one of~~ a

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mobile communication signal; ~~and a legacy wireless communication signal.~~

5. (Currently amended) The system of claim 1, wherein the first type of communication signal is carried over at least one of: ~~an approximately~~ a 400 MHz frequency band; ~~an approximately~~ an 800 MHz frequency band; ~~an approximately~~ a 900 MHz band; ~~an approximately~~ an 1800 MHz band; and ~~an approximately~~ a 2 GHz frequency band.

6. (Previously presented) The system of claim 1, wherein the second type of communication signal is a millimeter wave signal.

7. (Currently amended) The system of claim 1, wherein the second ~~type of communication module signal~~ is mounted ~~inside~~ adjacent a window inside ~~of~~ the building.

8. (Currently amended) The system of claim 1, wherein the second communication module is mounted adjacent ~~outside~~ a window outside ~~of~~ the building.

9. (Canceled).

10. (Original) The system of claim 1, wherein: the second communication module comprises at least one antenna that is a low to moderate gain array antenna.

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11. (Currently amended) The system of claim 10, wherein the low to moderate gain array antenna comprises ~~antennas comprise~~ interconnected beam-forming array patterns on both ~~the~~ outward and ~~the~~ inward facing sides, separated by an intervening ground plane.

12. (Original) The system of claim 1, wherein: the first communication module comprises communication processing circuitry that is configured to validate the first type of communication signal; and the first communication module only transmits the second type of communication signal if the first type of communication signal is validated by the communication processing circuitry.

13. (Currently amended) The system of claim 12, wherein the communication processing circuitry validates the first type of communication signal if the first type of communication signal is an emergency telephone called, placed, or received by emergency personnel.

14. (Original) The system of claim 1, wherein the first communication module is mounted on top of a vehicle.

15. (Original) The system of claim 1, wherein the first communication module is mounted to a structure at ground level.

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16. (Original) The system of claim 1, wherein the first communication module is mounted to an elevated structure.

17. (Original) The system of claim 1, wherein the first communication module comprises an antenna, wherein the antenna is a high gain fan beam antenna.

18. (Original) The system of claim 1, wherein the system is configured for floor-to-floor communication.

19. (Currently amended) A communication system, comprising:

a first communication module adapted to:

receive a first type of communication signal, convert the first type of communication signal to a second type of communication signal and transmit the second type of communication signal to a second communication module;

the second communication module disposed on a building and adapted to receive the second type of communication signal from the first communication module, and transmit the second type of communication signal inside the building to a third communication module; and

the third communication module located inside the building and adapted to receive the second type of communication signal, convert the

second type of communication signal into the first
type of communication signal and further comprising
a fourth communication module and a fifth
communication module, wherein:

the third communication module is
configured to:

receive a third communication signal;
convert the third communication signal
into a ~~third~~ millimeter wave radio signal; and
transmit the ~~third~~ millimeter wave radio
signal to the second communication module;

the second communication module is
configured to:

receive the ~~third~~ millimeter wave radio
signal;

transmit the ~~third~~ millimeter wave radio
signal to the fourth communication module;

the fourth communication module is mounted
to a ~~the~~ side of the building at a different
elevation than the second communication module and
is configured to:

receive the ~~third~~ millimeter wave radio
signal from the second communication module;
and

transmit the ~~third~~ millimeter wave radio
signal to the fifth communication module;

and

the fifth communication module is located

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inside the building at a different elevation than
the third communication module and is configured to:
receive the ~~third~~ millimeter wave radio
signal;
convert the ~~third~~ millimeter wave radio
signal into the third communication signal; and
transmit the third communication signal.

20. (Currently amended) A communication system as
recited in claim 1, wherein the first communication module
~~signal~~ is adapted to up-convert the first type of
communication signal to the second type of communication
signal.

21. (Currently amended) A communication system as
recited in claim 1, wherein the first communication module
~~signal~~ is adapted to down-convert the first type of
communication signal to the second type of communication
signal.

22. (Original) A communication system as recited in
claim 1, wherein the second communication module is on the top
of the building.

Claims 23-28 (Canceled).